

Application No. 09/693,377
Amendment "B" dated June 22, 2005
Reply to Office Action mailed February 23, 2005

REMARKS

These remarks and the accompanying amendments are responsive to the Office Action mailed February 23, 2005 (hereinafter referred to as the "Office Action"), having a shortened statutory period for response that expired May 23, 2005. A petition and fee for a one month extension of time extending the period for response until June 23, 2005 accompany this response.

As an initial matter, the undersigned noted that the PTO form 1449 form submitted on February 17, 2004 was not returned initialed by the Examiner in the Office Action dated February 23, 2005. The undersigned respectfully requests a returned copy of the PTO form 1449 with all considered references being initialed.

The Office Action rejected all of the pending Claims 12-23, in which Claims 12, 13, 15, 16, 18, 21 and 22 are independent. All of the independent claims are current amended herein to recite, *inter alia*, that "the pilot channel [is] spread using an orthogonal code and a spreading code" (emphasis added).

Specifically, section 2 of the Office Action rejected Claims 12, 15-17 and 21-23 under 35 U.S.C. 103(a) as being unpatentable over United States patent number 6,285,655 issued to Lundby et al. (hereinafter referred to as "Lundby") in view of United States Reissue patent number US RE37,420E reissued to Asano et al. (hereinafter referred to as "Asano").

Independent Claims 12, 15, 16, 21 and 22 each recite that the base station transmits "a signal of each of a plurality of channels included in each of a plurality of channel groups". This recitation is supported by Figures 4 and 5 of the applicants' specification. As further recited, the signal of each channel of each channel group is spread "by using an orthogonal code and a spreading code". An example of an orthogonal code is a channelization code, whereas an example of a spreading code is a scrambling code. Furthermore, the "spreading codes for use in

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spreading signals of respective channel groups differ[] from each other, [and] orthogonal codes for use in spreading signals of respective channels in each channel group differ[] from each other". Also, "channels of each channel group includ[e] a pilot channel" which is "spread by using an orthogonal code AND a spreading code" (emphasis added). In addition, "a signal transmitted over the pilot channel undergoes data modulation by a known pattern or does not undergo any data modulation".

In contrast, Lundby discloses that data from a traffic channel 212 and data from a pilot channel 232 are directed to a summer 240. Summer 240 sums signals from all traffic channels 212 and pilot channel 232 to transmit the pilot data for each beam. Further, in traffic channel, the traffic data is scrambled with a long PN sequence by a multiplier 220 and is covered with a Walsh sequence by multiplier 222. However, in Lundby, although the pilot data is covered with the Walsh sequence, pilot channel is not scrambled with the long PN sequence.

On the other hand, Asano discloses that spread codes resulting from multiplication of m orthogonal spread codes and a first PN series are assigned to channel number #1 to # m in the same cell, and spread codes resulting from multiplication of the same m orthogonal spread codes as above and a second PN series are assigned to channel numbers # $(m+1)$ to # $2m$.

However, even if Lundby and Asano are combined¹, the long PN sequence of Lundby is changed into the first PN series and the second PN series of Asano. Although the number of channels in the same cell can be increased, one skill in the art would not conclude that the pilot data is spread by using the PN series. In other words, one skill in the art would not conclude that

¹ Even if Lundby and Asano are combined, they do not teach or suggest all of the recited features of the claims. Accordingly, it is not necessary for a full response to argue against the combination of Lundby and Asano itself. Therefore, lack of such arguments against combination should not be deemed as acquiescing that the combination is appropriate. The applicants reserve the right to argue against the combination should this be required by future action.

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even the combination of Lundby and Asano suggests that a pilot symbol as well as data symbol are spread by using the orthogonal code and the spreading code.

Accordingly, independent Claims 12, 15, 16, 21 and 22 are not unpatentable over Lundby and Asano. Furthermore, Claim 17 (which depends from Claim 16), and Claim 23 (which depends from Claim 23) are patentable over the combination for at least the same reasons as for their corresponding independent claim. Therefore, withdrawal of the 35 U.S.C. 103(a) rejection of Claims 12, 15-17 and 21-23 is respectfully requested.

Section 3 of the Office Action rejects Claims 13, 14 and 18-20 under 35 U.S.C. 103(a) as being unpatentable over Lundby, in view of Asano, and further in view of United States patent number 6,094,450 issued to Shockey (hereinafter referred to as "Shockey"). Shockey discloses that a pilot PN sequence generator 14 is controlled by a PN clock 18 which operates at a higher frequency than a data bit rate from a data source 26. However, Shockey (US6094450) does not disclose that channels of each channel group includes a pilot channel, and the pilot channel is spread by using the orthogonal code and the spreading code as recited in each of independent Claims 13 and 18.

Accordingly, independent Claims 13 and 18 are not unpatentable over even the combination of Lundby, Asano, and Shockey². Furthermore, Claim 14 (which depends from Claim 13), and Claims 19 and 20 (which depend from Claim 18) are patentable over the combination for at least the same reasons as for their corresponding independent claim. Therefore, withdrawal of the 35 U.S.C. 103(a) rejection of Claims 13, 14 and 18-20 is respectfully requested.

² Even if Lundby, Asano and Shockey are combined, they do not teach or suggest all of the recited features of the claims. Accordingly, it is not necessary for a full response to argue against the combination of Lundby, Asano and Shockey itself. Therefore, lack of such arguments against combination should not be deemed as acquiescing that the combination is appropriate. The applicants reserve the right to argue against the combination should this be required by future action.

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In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 22nd day of June, 2005.

Respectfully submitted,



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